

**AGGREGATE SPECIFICATION LIMITS & SAMPLING AND TESTING GUIDE**

(See Specifications for Complete Details.)

April 20, 2004

Supersedes April 15, 2003

Matls. IM 209

Appendix C

TEST LIMITS	Spec #	F & T A	F & T C	LA Abrasion	Absorption	Chert	Shale	Clay Lumps	Plastic Index	Mortar Strength	Al ₂ O ₃ Limit	Pore Index	Gradation Number
<u>Fine Aggregate for PCC</u>													
PCC	4110.00						2			1.5			1
<u>Note:</u> Maximum 40% between sieves If the gradation is 80% or less passing the #16 sieve and 50% or less passing the #30 sieve, no mortar strength is required. Annual test requiring mortar strength of 1.5 or greater and a fineness modulus of 2.75 or greater for continued approval.													
PCC, Class L	4111.00						2			1.3			1
<u>Note:</u> Maximum 45% between sieves													
Mortar	4112.00						2			0.9			2
<u>Note:</u> Shale + coal not to exceed 2%													
<u>Coarse Aggregate for PCC</u>													
Crushed Stone	4115.00												
<u>Note:</u> Chert particles are those retained on the 3/8" sieve, except for 4115.06, which uses the #4 sieve. <u>Note:</u> Chert refers to unsound chert on 3/8" sieve, which break into 3 or more pieces when subjected to freeze/thaw tests.													
-Structural		6		50		2	1	0.5			0.5		3-5
-Nonstructural		6		50		3	1	0.5			0.5		3-5
Gravel	4115.00												
-Structural		6		35		2	1	0.5					3-5
-Nonstructural		6		35		3	1	0.5					3-5
Deck Overlay	4115.06	4		40	2.5	0.5					0.4		6
<u>Note:</u> Chert + shale + coal + iron not to exceed 1%.													
<u>Class V Aggregate</u>	4117.00	6		40			2 (+#16)			1.5			7
<u>Note:</u> Coarse Aggregates as in 4115 (except abrasion) and Fine Aggregates as in 4110.00 and 4111.00													
Class V (Fine Limestone)	4117.03												8
<u>Note:</u> Only from sources acceptable as coarse aggregate													

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Granular Surfacing													
Aggr. For Granular Shoulders	4120.02	<u>Note:</u> A gravel/limestone aggregate mixture may be allowed. See Specification 4120.02 for details.										Per 4120.02	
Class C Gravel	4120.03	15				10		15				10	
<u>Note:</u> Percent of Clay Lumps + particles passing #200 sieve not to exceed 15%.													
Class A Crushed Stone	4120.04	15		45				4				11	
<u>Note:</u> For shoulders only; material with Al ₂ O ₃ not exceeding 0.7 or A-freeze not exceeding 10 may have an abrasion maximum of 55.													
Class B Crushed Stone	4120.05	20		55				4				11	
<u>Note:</u> "C" Freeze + Abrasion not to exceed 65%													
Class D Crushed Stone	4120.06	<u>Note:</u> "C" Freeze, Abrasion, and Gradation to be specified by Contract Documents.											
Paved Shoulders	4120.07	15		45				4				16	
Fillets	<u>Note:</u> Material with Al ₂ O ₃ not exceeding 0.7 or A-freeze not exceeding 10 may have an abrasion maximum of 55.												
Granular Subbase													
	4121.00	25		50						1.5		12	
<u>Note:</u> Combinations of crushed PCC, sand, gravel, or crushed stone may be used. Specification limits are for crushed stone or gravel.													
Crushed Stone-Base													
Macadam Stone	4122.02	10		45								13(Visual)	
<u>Note:</u> Choke stone. See Specification 4122.02C for details.													
Per 4122.02C													

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Modified Subbase													
	4123.00		15	45							4.7(-#40)		14
Note: Material with Al ₂ O ₃ not exceeding 0.7 (+4) or A-freeze not exceeding 10 may have an abrasion maximum of 55. Note: If gravel only, 75% of +3/8" must be crushed with a minimum of one fractured face.													
Cover Aggregate													
Cover Aggregate for Bituminous Seal Coats													
	4125.01A		10	40			5						1,19-21
Note: Friction Type 4D or better, Shale on Sand Cover Aggregate shall not exceed 2%.													
Aggregate for Slurry Mixture													
	4125.01B		10	40			5				0.7		23
Note: Friction Type 4 or better, sand equivalent of not less than 45.													
Aggregate for Type B HMA													
Type B													
Primary	4126.02	25	10	45	6.0						1.5		Per Form 955
Non-Primary	4126.02	45	10	45	6.0						2.5		Per Form 955
Composite Aggregate for HMA													
Type B	4126.04								4				Per Form 955
Note: The fine portion of combined materials shall not exceed 5% shale retained on the #16 sieve.													
Coarse Aggregate for HMA													
Type A	4127.00	10		45	6.0			0.5			0.7		Per Form 955
Fine Aggregate for HMA													
Type A	4127.03							0% on 1.5"					Per Form 955
Note: Crushed fine aggregate shall be produced from sources meeting freeze/thaw and abrasion loss requirements for coarse Aggregates for ACC.													
Combination of Materials													
Type A	4127.05												Per Form 955
Note: The fine portion of combined materials shall not exceed 2% shale retained on the #16 sieve.													

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<u>Revetment Stone</u>													
Class A	4130.02	10*	5**	50	(*Primary/**Non-primary)						0.7	25	Visual
Class B	4130.03	10*	5**	50							0.7	25	Visual
Class D	4130.04		10	50									Visual
Class E	4130.04	10		50							0.7	25	Visual
		<u>Note:</u> See Specification 4130.01 for bedding plane/concrete slab thickness requirements.											
Erosion Stone	4130.05		15	50	5						Visual		
<u>Porous Backfill</u>													
	4131.00	10		45	5 (+#16)						0.7		29
		<u>Note:</u> Material shall be free of visible clay and objectionable clay coating.											
<u>Special Backfill</u>													
Crushed Stone/Concrete	4132.02												30,31
Gravel	4132.03										10		31
		<u>Note:</u> Carbon of no more than 1% on fraction passing the #40 sieve.											
<u>Granular Backfill</u>													
	4133.00							4					32
		<u>Note:</u> “C” Freeze and Abrasion requirements are equivalent to those of either 4120.04 or 4120.05.											
<u>Recycled PCC</u>		<u>Note:</u> Recycled PCC must meet gradation and sampling frequency of the intended product.											
<u>Recycled Composite Pavement</u>		<u>Note:</u> Recycled composite pavement must meet gradation and sampling frequency of the intended product.											